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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/632,543	08/04/2000	Rajendra K. Talluri	TI-28919	1760

7590 12/01/2004

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/632,543

Applicant(s)

TALLURI ET AL.

Examiner

LUONG T NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3-6 filed on 07/0704 have been considered but are moot in view of the new ground(s) of rejection.

In re page 9, Applicants argue that Mizutani do not form a multiply and accumulate units because there is no accumulation.

In response, regarding claim 1, Applicants amended claim 1 with the limitation “a third processor coupled to said second processor, said third processor including at least four parallel multiply and accumulate units.” The Examiner considers that Mizutani et al. does disclose at least four parallel multiply and accumulate units, which read on six parallel multipliers 85-87, 95-97 and adders 88-90, 98-100 (Figure 7, Column 9, Lines 49-53). It should be noted that adders 88-90, 98-100 have function of accumulation.

In re page 9, Applicants argue that amended claim 3 requires the compression be of the acquired images, not of the already-processed image as in Mizutani which applies input processing 21 of Fig. 2 prior to JPEG compression.

In response, regarding claim 3, it is noted that the feature “*the compression be of the acquired images, not of the already-processed image*” is not a claim language; Applicants only recited the limitation “to compress acquired images for storage in a memory”. Therefore, the limitation “acquired images” can be read as images before compressing by JPEG encoder/decoder 29 (figure 2, column 5, lines 45-52).

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In re page 9, Applicants argue that amended claim 4 requires a digital image processing unit, where as Fukuoka processing circuit 4 is analog.

In response, regarding claim 4, Applicants amended claim 4 with the limitation “a digital image processing unit”. The Examiner considers that the combination of processing circuit 4 and A/D converter 5 is a digital image processing unit as claimed in claim 4.

Claim Objections

2. Claims 5-6 are objected to because of the following informalities:

Claim 5 (line 2), “(a) an audio” should be changed to --(d) an audio--.

Claim 6 (line 2), “(a) camera peripherals including IfSA” should be changed to --(d) camera peripherals including IrDA--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Safai (U. S. Patent No. 6,642,956) in view of Mizutani et al. (U. S. Patent No. 6,674,464).

Regarding claim 1, Safai discloses an integrated circuit for a digital still camera, comprising a first programmable processor programmed (microprocessor 312, Figure 3, Column

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7, Lines 7-28) to run control functions, said first processor coupled to a user interface (display 318 and touch screen 319, Figure 1), a controller for memory (display controller 317, Figure 1), and a controller for image acquisition (image capture unit 302); and a second programmable processor (digital image processor 310, Figure 3, Column 5, Lines 45-58) programmed to run image processing (performing some processing of digital images, Column 5, Lines 50-54) and compression functions (digital compressor 426, Figure 4, Column 9, Lines 43-55), said second processor coupled to said first processor (Figure 3 shows that digital image processor 310 coupled to microprocessor 312).

Safai fails to specifically disclose a third processor coupled to said second processor, said third processor including at least four parallel multiply and accumulate units. However, Mizutani et al. discloses a digital still camera 1, which includes resolution conversion circuit 28 (third processor) coupled to memory controller 22 (second processor, Figures 2, 6, Column 5, lines 33-53, Column 6, Lines 18-40), the resolution conversion circuit 28 includes six parallel multipliers 85-87, 95-97 and adders 88-90, 98-100 (Figure 7, Column 9, Lines 49-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Safai by the teaching of Mizutani et al. in order to perform resolution conversion so that the image data will be in meeting with VGA format in the NTSC system and PAL system (Column 16, Lines 21-28). This makes the image data read out from the high resolution can be displayed on lower resolution display.

Regarding claim 3, Safai discloses an integrated circuit for a digital still camera, comprising a first programmable processor programmed (microprocessor 312, Figure 3, Column

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7, Lines 7-28) to run control functions, said first processor coupled to a user interface (display 318 and touch screen 319, Figure 1), a controller for memory (display controller 317, Figure 1), and a controller for image acquisition (image capture unit 302); and a second programmable processor (digital image processor 310, Figure 3, Column 5, Lines 45-58) programmed to run image processing (performing some processing of digital images, Column 5, Lines 50-54) and compression functions (digital compressor 426, Figure 4, Column 9, Lines 43-55), said second processor coupled to said first processor (Figure 3 shows that digital image processor 310 coupled to microprocessor 312).

Safai fails to specifically disclose an image compression unit separate from said second processor, said compression unit arranged to compress acquired images for storage in a memory and to decompress said compressed acquired images in said memory for restorage in said memory. However, Mizutani et al. discloses a digital still camera 1 includes compression/expansion circuit 29, which is separated from memory controller 22, compresses image data to store in image memory 32, and expands the compressed image data (Figures 2-3, Column 6, Lines 25-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Safai by the teaching of Mizutani et al. in order to compress image data before storing image data into a memory. This increases the amount of image data to be stored in the memory.

Regarding claim 6, Safai discloses camera peripherals including USB, NTSC/PAL encoder, and compact flash/smart media interface (USB port, TV signal output port, PCMCIA port, Figure 3, Column 7, Lines 13-18). Safai fails to specifically disclose camera peripherals

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including IfSA, NTSC/PAL encoder. However, Mizutani et al. discloses a digital still camera 1 includes an NTSC/PAL encoder 23, and IrDA interface 45 (Figure 2, Column 5, Lines 39-40, Column 6, Lines 53-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Safai by the teaching of Mizutani et al. in order to display image data on a TV monitor.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Safai (U. S. Patent No. 6,642,956) in view of Fukuoka (U. S. Patent No. Re. 36,338).

Regarding claim 4, Safai discloses an integrated circuit for a digital still camera, comprising a first programmable processor programmed (microprocessor 312, Figure 3, Column 7, Lines 7-28) to run control functions, said first processor coupled to a user interface (display 318 and touch screen 319, Figure 1), a controller for memory (display controller 317, Figure 1), and a controller for image acquisition (image capture unit 302); and a second programmable processor (digital image processor 310, Figure 3, Column 5, Lines 45-58) programmed to run image processing (performing some processing of digital images, Column 5, Lines 50-54) and compression functions (digital compressor 426, Figure 4, Column 9, Lines 43-55), said second processor coupled to said first processor (Figure 3 shows that digital image processor 310 coupled to microprocessor 312).

Safai fails to specifically disclose a digital image processing unit separate from said first and second processors, said image processing unit arranged for real-time image sequence (video) processing, said image processing unit controlled in real-time by said first processor. However, Safai discloses processing real-time image sequence (raw digital images are captured by the

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imaging unit 202, Figure 2A, Column 4, Lines 22-30). And Fukuoka discloses an electric still camera includes processing circuit 4 and A/D converter 5 (a digital image processing unit), which is separated from CPU 11 (first processor) and digital signal processing 6 (second processor), Figure 1, Column 4, Lines 18-39. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Safai by the teaching of Fukuoka in order to separate signal into a brightness signal and color signals before converting to digital signal for further digital signal processing.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Safai (U. S. Patent No. 6,642,956) in view of Mizutani et al. (U. S. Patent No. 6,674,464) further in view of Fukuoka (U. S. Patent No. Re. 36,338).

Regarding claim 5, Safai and Mizutani et al. fail to specifically disclose an audio input coupled to said second processor, said second processor programmed to decode audio and said first processor programmed to output said decoded audio. However, Fukuoka discloses an electric still camera includes microphone 12 for inputting sound, microphone 12 is coupled to the sound data compressing-extending circuit 15 (second processor). The sound data are extended by the sound data compressing-extending circuit 15, and outputted as an audio signal through D/A 22 and amplifier 23 by the control of central processing 11 (first processor), Figure 1, Column 5, Lines 4-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Safai and Mizutani et al. by the teaching of Fukuoka in order to record sound data together with image data.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T NGUYEN whose telephone number is (703) 308-9297. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN LN
11/28/2004



AUNG MOE
PRIMARY EXAMINER